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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,506	12/11/2003	Harvey L. Berger	NGC-262/22-0177	9200

7590 02/05/2008  
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EXAMINER
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SINGH, RAMNANDAN P

ART UNIT	PAPER NUMBER
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2614

MAIL DATE	DELIVERY MODE
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02/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<div style="border: 1px solid black; width: 200px; height: 20px; margin-bottom: 5px;"></div> <p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 10/733,506	<b>Applicant(s)</b> BERGER ET AL.	
	<b>Examiner</b> Ramnandan Singh	<b>Art Unit</b> 2614	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities: Claim 1 recites "a fraction  $1/n$ " in line 4. The symbol "n" is not defined. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomlinson et al ["Fade Countermeasures at Ka Band: Direct Inter-establishment Communications Experiment (DICE)", IEE Colloquium on 17 Dec. 1991, Pages 4/1-4/6].

Regarding claim 6, Tomlinson et al disclose s digital communication apparatus, as shown in Fig. 1, comprising:

means (variable data rate) for reducing the rate of an information data stream to be transmitted from an original signaling rate  $R$  to a selected reduced rate using a direct-sequence spread spectrum system [Fig. 1];

a pseudorandom noise source (PRC generator) generating a stream of practically random data at the original signaling rate  $R$  (i.e. at a chip rate) [Fig. 1];

means (Exclusive OR) for logically combining the reduced signaling rate information data stream and the data stream from the pseudorandom noise generator Fig. 1]; and

means (channel) for transmitting the logically combined data stream at the original signaling rate [Fig. 1]; wherein signal-to-noise performance is enhanced (due to the use of the higher spreading factor) to compensate for rain attenuation (i.e. the fading of signals due to rain) without increasing power flux density levels [page 2; lines 6-10; Page 2, Section 2, line 1 to page 3, line 6].

Claim 1 is essentially similar to claim 6 and is rejected for the reasons stated above.

Regarding claim 7, Tomlinson et al further discloses the digital communication apparatus, wherein: the means for logically combining comprises a logical Exclusive OR circuit [Fig. 1].

Regarding claim 8, Tomlinson et al further discloses the digital communication apparatus comprising:

means (demodulator and desreader) for receiving and demodulating the logically combined data stream [Fig. 1];

a second pseudorandom noise source (sync PRC generator) located near the means for receiving, for generating a stream of data identical with the one produced by the first pseudorandom noise source [Fig. 1]; and

means (Exclusive ORs) for logically combining the demodulated data stream with the data stream from the second pseudorandom noise source, for recovering the original data stream at the reduced signaling rate [Fig. 1; Page 2, Section 2, lines 1-26].

Claim 2 is essentially similar to claim 8 and is rejected for the reasons stated above.

Regarding claim 3, Tomlinson et al further discloses the method, wherein the randomizing step comprises:

generating a pseudorandom noise sequence of bits at the original signaling rate R, which is equal to the chip rate ; and logically combining the pseudorandom noise sequence with the reduced signaling rate signals to produce the randomized signal [Fig. 1; page 2, Section 2, last paragraph].

Regarding claim 4, Tomlinson et al further discloses the method, wherein the logically combining step comprises performing a logical exclusive OR operation [Fig. 1].

Regarding claim 5, the limitations are shown in claim 8 above.

4. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruckert [US 5,325,394].

Regarding claim 6, Bruckert discloses a spread-spectrum communication apparatus, as shown in Fig. 1, comprising:

means (106) for reducing the rate of an information data stream to be transmitted from an original signaling rate  $R$  to a selected reduced rate using a direct-sequence spread spectrum system [Fig. 1];

a pseudorandom noise source (long PN generator) (110) generating a stream of practically random data at the original signaling rate  $R$  (i.e. at a chip rate) [Fig. 1];

means (Exclusive OR) (112) for logically combining the reduced signaling rate information data stream and the data stream from the pseudorandom noise generator [ Fig. 1]; and

means (channel) for transmitting the logically combined data stream at the original signaling rate [Fig. 1]; wherein signal-to-noise performance is enhanced (due to the use of the higher spreading factor) to compensate for rain attenuation (i.e. the fading of signals due to rain) without increasing power flux density levels [ Fig. 1; col. 5, line 10 to col. 8, line 7].

Claim 1 is essentially similar to claim 6 and is rejected for the reasons stated above.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated



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information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ramnandan Singh  
Primary Examiner  
Art Unit 2614